



JPSS Life-Cycle SDR in NOAA/STAR

SNPP SDR Data Reprocessing and Its Science Impacts

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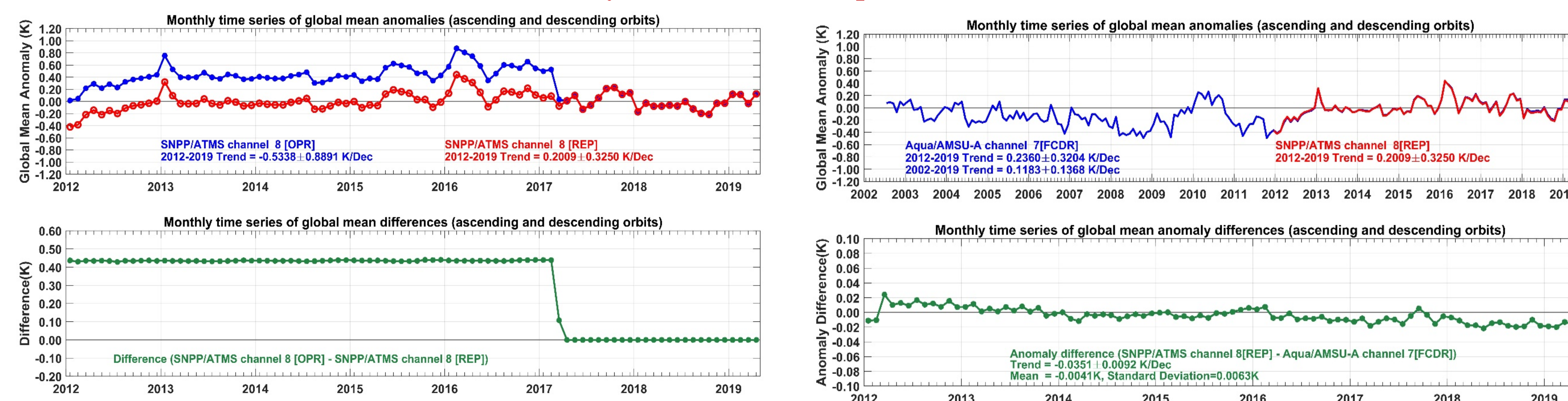
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The Suomi NPP (SNPP) satellite was launched successfully on October 28, 2011 and was a pathfinder for the U.S. Joint Polar Satellite System (JPSS) operational satellite series. The primary objectives of the SNPP mission are to provide a continuation of the Earth system observations initiated by the Earth Observing System (EOS) Terra, Aqua, and Aura missions, as well as the NOAA heritage polar-orbiting satellite series; and prepare the operational forecast community with pre-operational risk reduction, demonstration, and validation for selected JPSS instruments and ground processing data systems. Since the launch of SNPP, the Sensor Data Record (SDR) and Environment Data Record (EDR) were in various levels of maturity as the data moved through beta, provisional, and then validated stages. NOAA/STAR reprocessing uses mature algorithms that ensures all JPSS satellite data, starting with SNPP from the beginning of the time series through the JPSS life cycle, will be consistent on a common reference frame with known uncertainty. The SNPP baseline SDR reprocessing for ATMS, CrIS, VIIRS, and OMPS has been completed in NOAA/STAR recently. Generally, reprocessing SDR data are more stable, have fewer anomalies, and show the neutral/positive impacts on EDR and many other applications. In the future, SDR reprocessing will be carried out to NOAA-20 and future JPSS satellites to ensure a long-term stable JPSS SDR datasets.

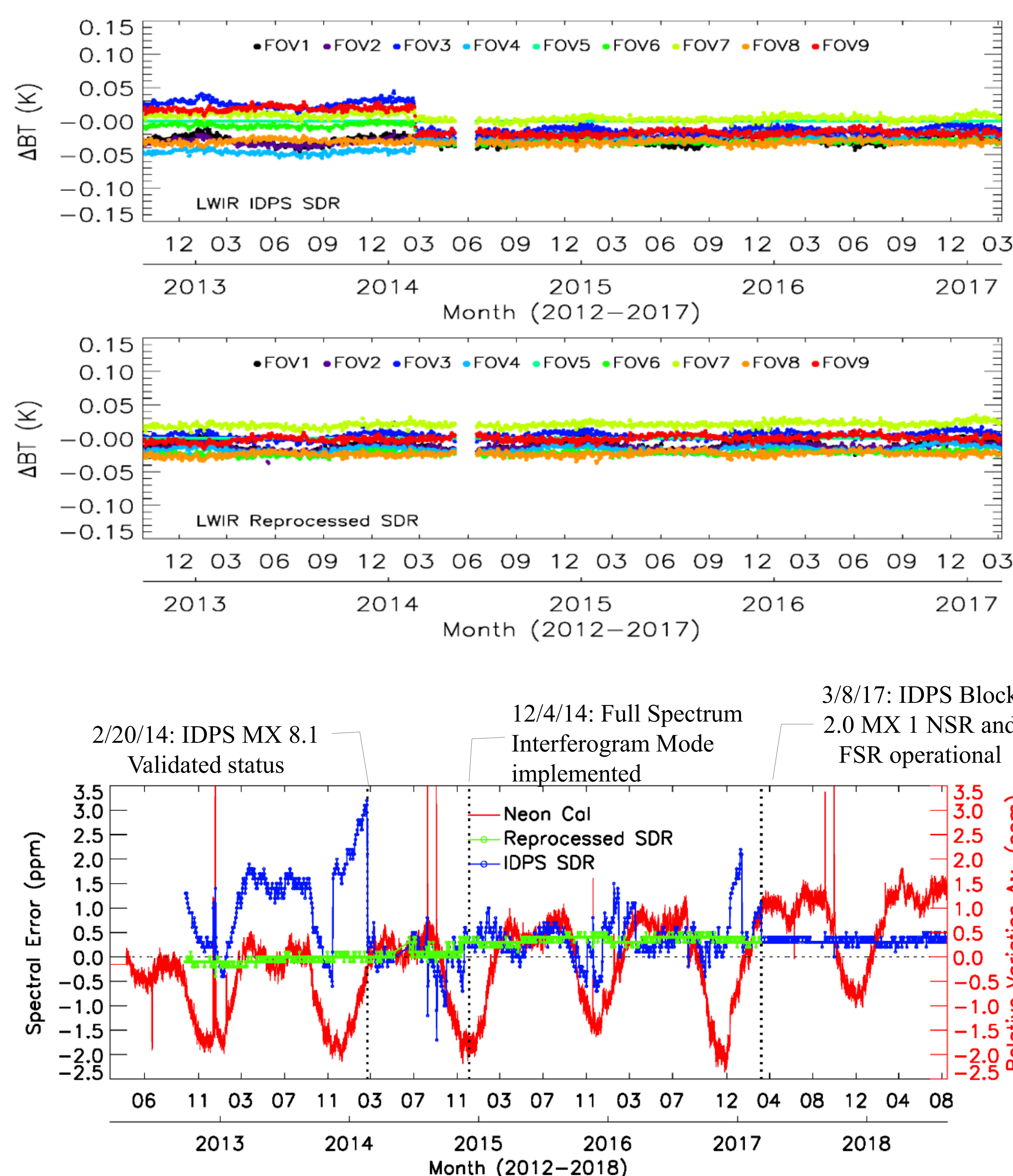
Available Reprocessed SNPP Dataset

Sensor	Data Types	Daily Volume	Date Period	Total Days	Total Volume
ATMS	TDR+SDR+GEO	1241 MB	2011/11/08~2017/03/08	1948	2.42 TB
CrIS	NSR SDR+GEO	44.3 GB	2012/03/01~2017/03/08	1834	81.25 TB
CrIS	FSR SDR	74 GB	2014/12/04~2017/03/08	826	61.12 TB
VIIRS	SDR+GEO	415 GB	2012/02/20~2017/03/08	1845	765.68 TB
OMPS NP	SDR+GEO	261 MB	2012/01/26~2017/03/08	1869	487.81 GB
OMPS TC	SDR+GEO	3 GB	2012/01/26~2017/03/08	1869	5.61 TB
Total					916.57 TB

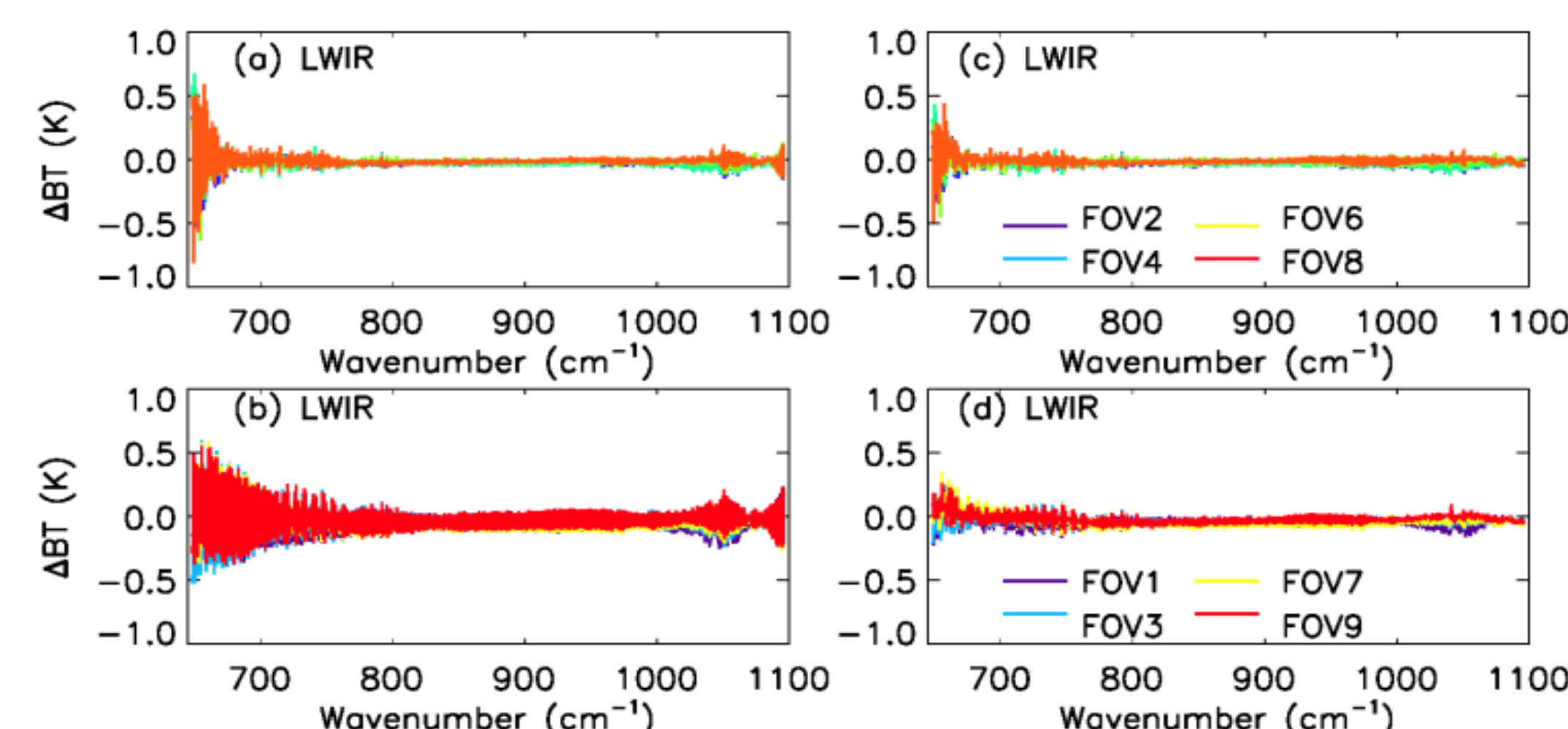
Stability Assessment of Reprocessed ATMS SDR



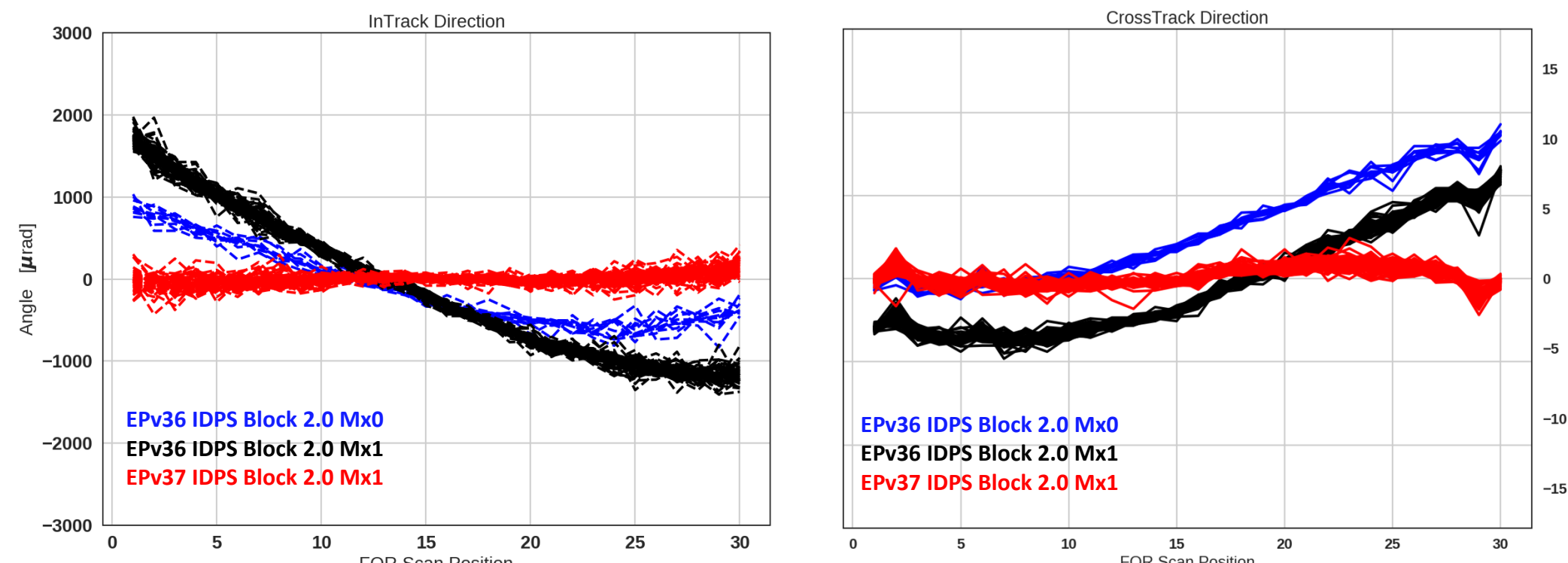
Improvements of Reprocessed CrIS SDR



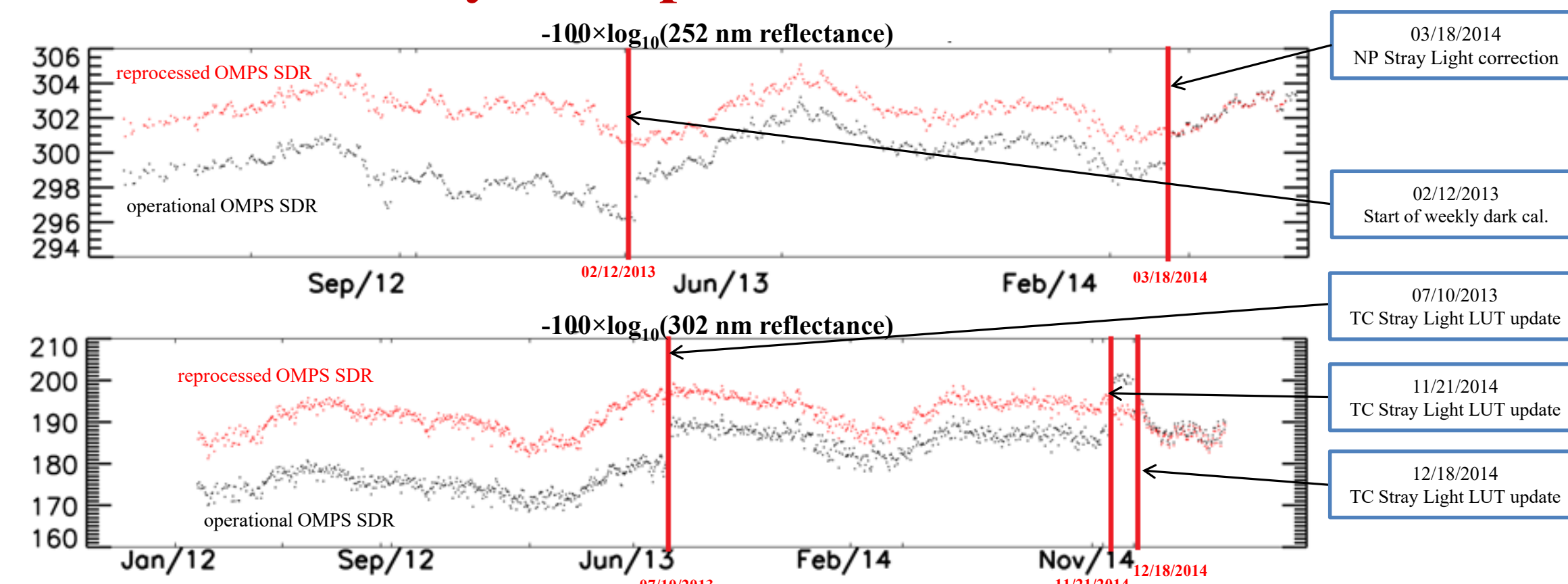
FOV Consistency Improvements of Reprocessed CrIS



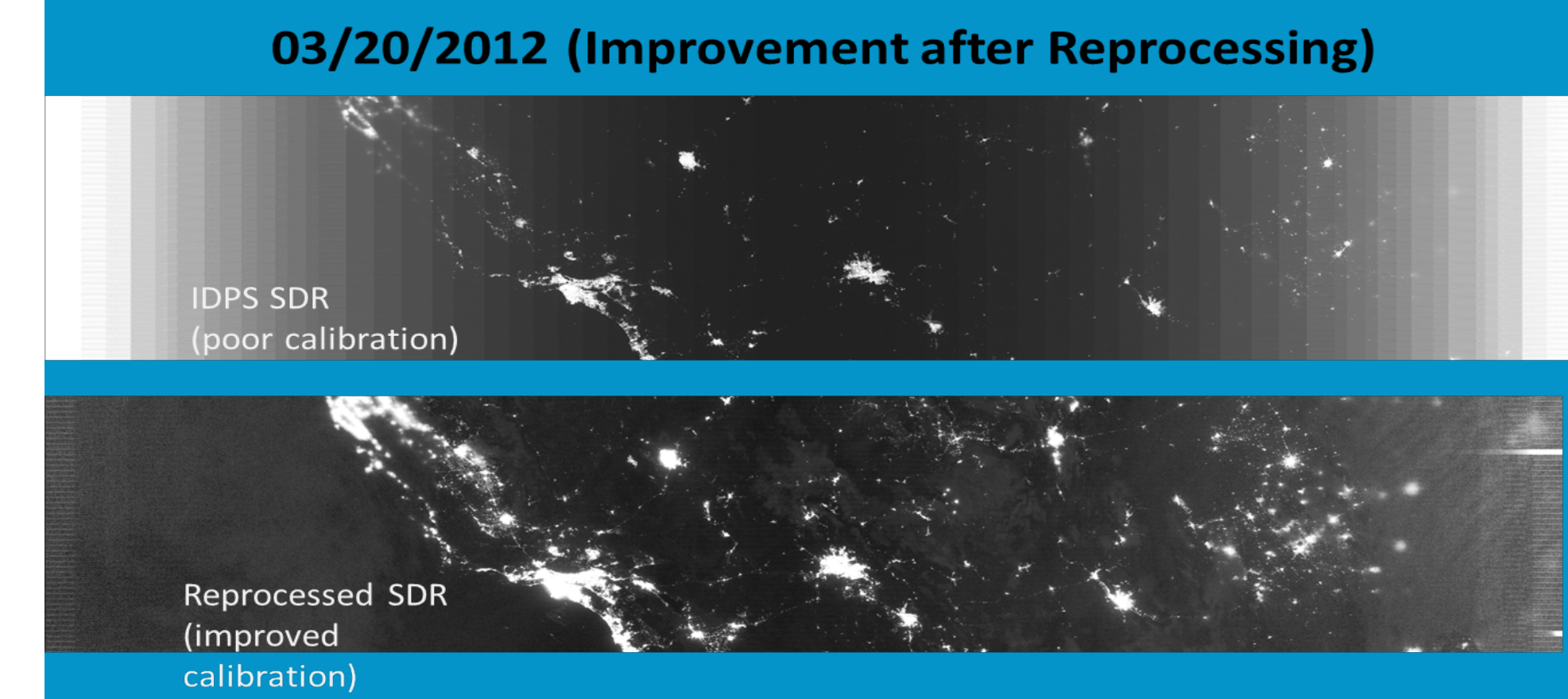
Geolocation Improvements of Reprocessed CrIS



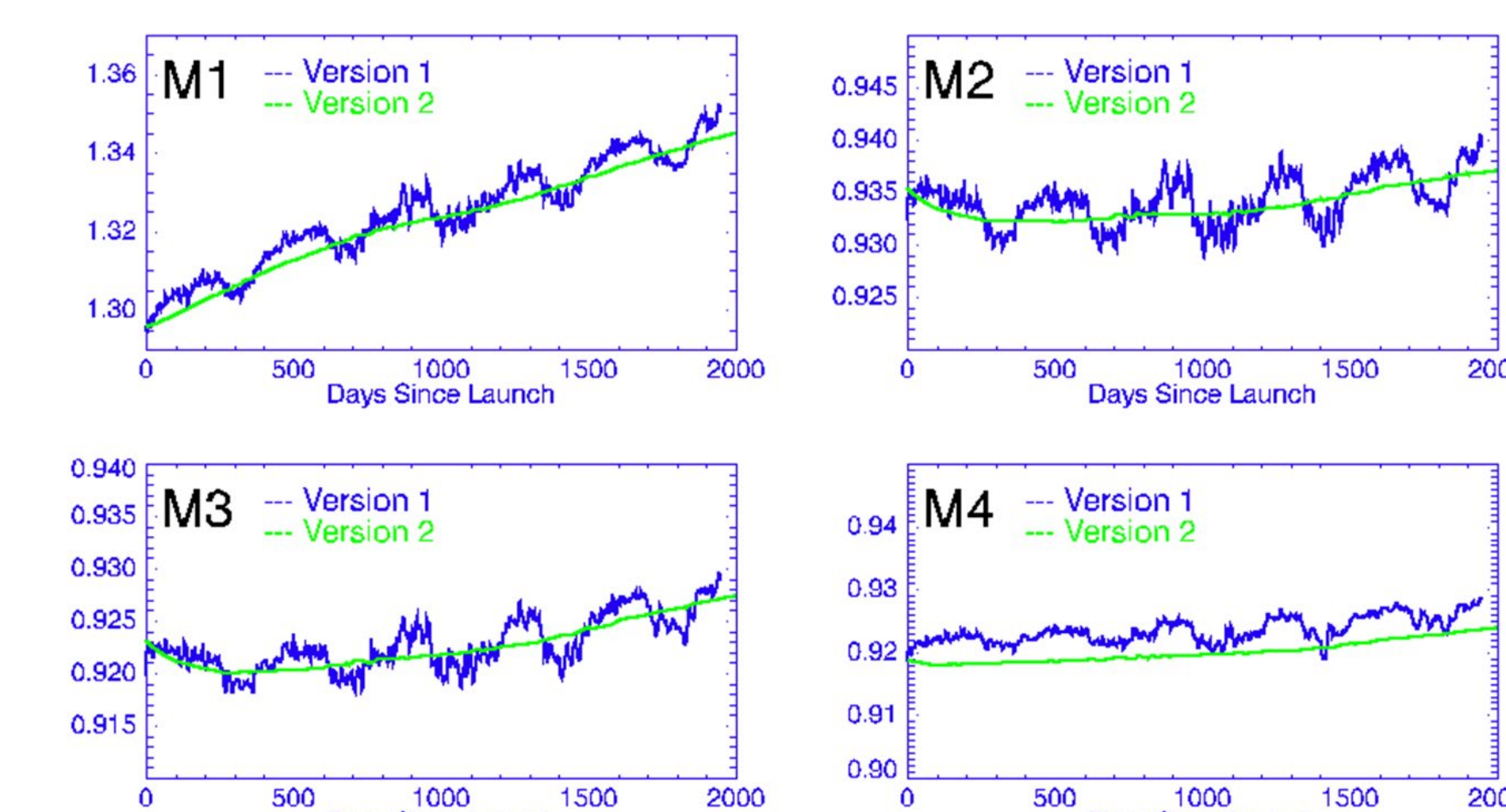
Consistency of Reprocessed OMPS SDR



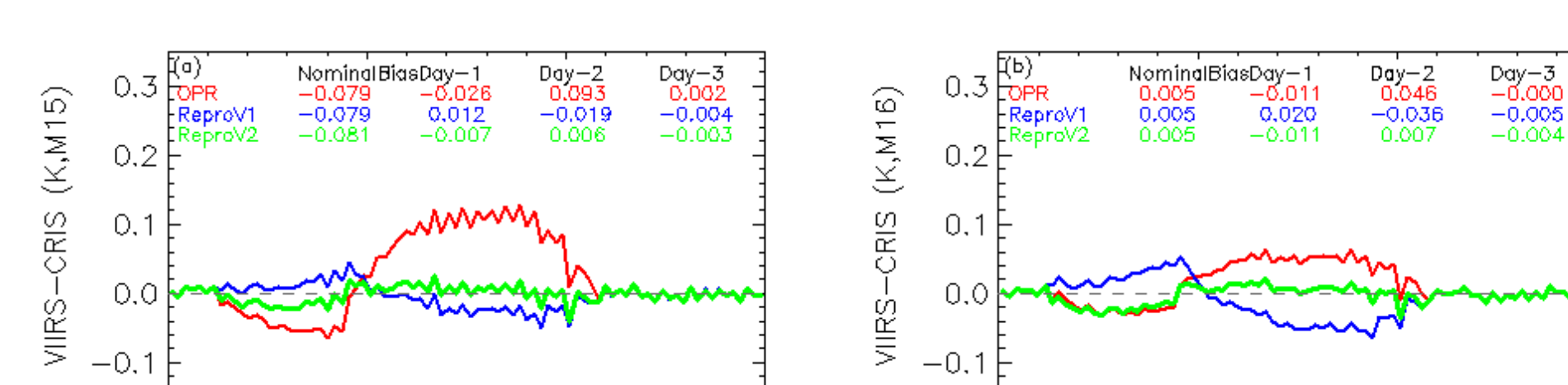
VIIRS DNB Reprocessing Improvements



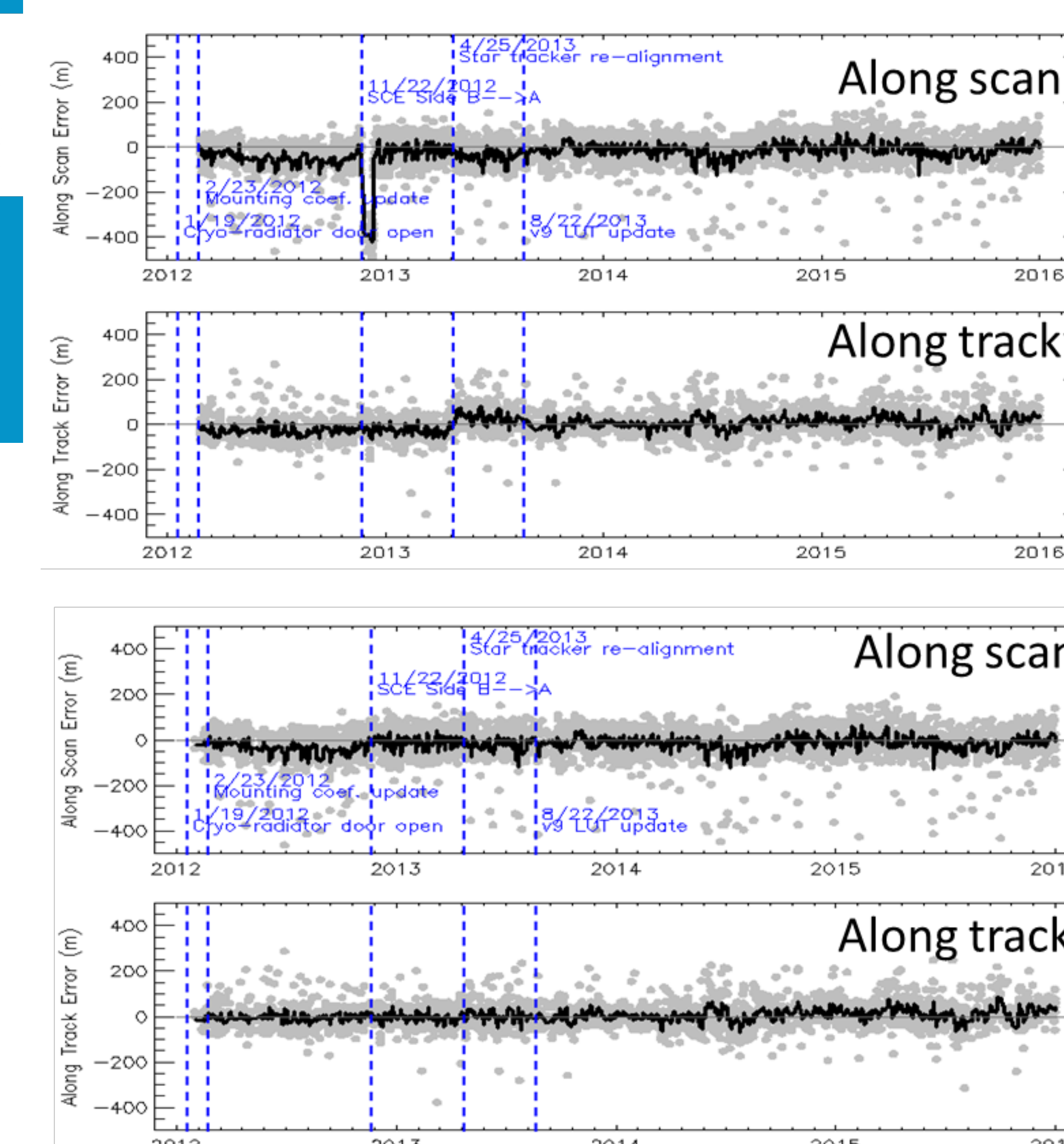
VIIRS RSB Reprocessing Improvements



VIIRS TEB Reprocessing Improvements



VIIRS Geolocation Reprocessing Improvements



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